

Going Nuts for Words: Recommendations for Teaching Young Students Academic Vocabulary

Tricia A. Zucker, Sonia Q. Cabell, Danielle L. Pico

Teachers of young children can consider how to directly teach academic vocabulary and motivate their prekindergarten to grade 1 students to be interested in using these words.

ave you ever had a young child ask you what a word means and, although you knew the word, you struggled to explain this in a way the child could understand? Asking what a word means is a valuable word learning strategy. Educators should celebrate such questions that demonstrate children's interest in words.

In this article, we explain why early vocabulary development is critical to later reading success and describe strategies for high-quality vocabulary instruction. Throughout, we share examples of effective vocabulary instruction observed through our research in early childhood classrooms (e.g., Zucker et al., 2019, 2020). We conclude with evidence that early childhood teachers can improve both the quantity and the quality of their academic vocabulary instruction with these instructional strategies.

The Importance of Vocabulary

Building a strong vocabulary is essential for reading and broader academic success (Foorman et al., 2016). Indeed, vocabulary is a strong determinant of reading comprehension (Ricketts, Nation, & Bishop, 2007). Knowing the meanings of words in a text enables the reader to better comprehend (Wright & Cervetti, 2017). Moreover, vocabulary is viewed as an indicator of what children know about the natural and social world (Anderson & Nagy, 1993). Having broad world knowledge and vocabulary provides an

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

academic advantage as this knowledge builds over time (Stanovich & Cunningham, 1993).

Building vocabulary should start early in children's lives. Young children must learn a large number of words each school year to be successful readers. Researchers have varied in their estimates of how many words children must learn to be successfully prepared for college and careers, but estimates range from 3,000 to 4,000 words per year (Anderson & Nagy, 1993; Snow & Kim, 2007). Therefore, from the youngest grades, educators must be intentional about providing children with experiences to build a broad vocabulary.

A Comprehensive Vocabulary Approach

What does a complete vocabulary program for young children include? Graves, Schneider, and Ringstaff (2018) have long argued that a comprehensive vocabulary program for in upper elementary includes four components: wide reading, direct instruction for

Tricia A. Zucker is an associate professor in the Children's Learning Institute at The University of Texas Health Science Center at Houston, USA; email tricia.zucker@uth.tmc.edu.

Sonia Q. Cabell is an assistant professor in the Florida Center for Reading Research and the College of Education at Florida State University, Tallahassee, USA; email scabell@fcrr.org.

Danielle L. Pico is a doctoral student in the School of Special Education, School Psychology, and Early Childhood Studies at the University of Florida, Gainesville, USA; email leuschendepicod@ufl.edu.

individual words, word learning strategies, and word consciousness. These four components are effective in grades 2–5 (Blachowicz, Baumann, Manyak, & Graves, 2013).

We have extended this comprehensive vocabulary model for younger prekindergarten to grade 1 children who cannot yet read widely on their own or

use word learning strategies such as referencing dictionaries. On the basis of vocabulary programs evaluated with younger prekindergarten through grade 1 children (e.g., Coyne, McCoach, Loftus, Zipoli, & Kapp, 2009; Neuman & Kaefer, 2018; Zucker et al., 2019), educators should promote incidental vocabulary learning, provide direct vocabulary instruction, and foster word consciousness. These three components are illustrated in Figure 1.

Extensive empirical research has suggested that various rich language experiences promote incidental word learning: shared book reading (e.g., Wasik, Hindman, & Snell, 2016), multiple-turn conversations (e.g., Cabell, Justice, McGinty, DeCoster, & Forston, 2015), and engaging science, social studies, or other content area instruction (Gonzalez et al., 2010). Although incidental word learning opportunities are essential, our focus in this article is on the other two components: direct vocabulary instruction and promoting

word consciousness.

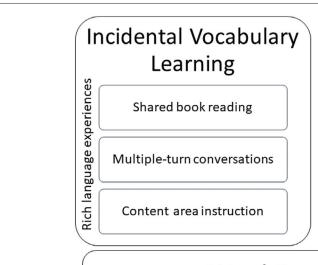
PAUSE AND PONDER

- How much instructional time (minutes) might you devote daily to directly teaching vocabulary?
- What steps do you use to plan how you will teach academic words to young children?
- How do you celebrate and reinforce learning when children use sophisticated words?
- How might you increase children's motivation to learn new vocabulary and understand the power of words?

Why Is Direct Vocabulary Instruction Important?

Incidental learning happens through mere exposure to a word; in contrast, direct vocabulary instruction includes asking children to attend to a word's explanation and remember its meaning. Although children do learn words incidentally from quality language input, directly teaching vocabulary improves recall of words and deepens

Figure 1
Components of a Comprehensive Vocabulary Program for Young Children



Direct Vocabulary Instruction

Teach individual words in texts and units of study

Encourage children to ask adults what words mean as an early word learning strategy

Word Consciousness

Explain the power of words. Motivate children to use new words. Encourage word play. Model academic language.

Note. The color figure can be viewed in the online version of this article at http://ila.onlinelibrary.wiley.com.

understanding of the word's meaning (e.g., Penno, Wilkinson, & Moore, 2002; Sonbul & Schmitt, 2010).

Research has repeatedly demonstrated that children learn words they are directly taught (Marulis & Neuman, 2010). For example, a seminal study found children learned 25% more words when teachers directly explained word meanings during shared book reading, compared with simply hearing them read aloud (Elley, 1989). Extensive evidence demonstrates that the quality of direct instruction as well as subsequent opportunities to use new words helps solidify vocabulary learning (e.g., Coyne et al., 2009; Penno et al., 2002).

Importantly, using words encourages active, rather than passive engagement with vocabulary. Providing multiple opportunities for discussion and practice using new words is more effective than providing definitions alone (Ebbers & Denton, 2008). For example, a recent study demonstrated that having children engage with teachers and their peers in center activities that used taught vocabulary improved general vocabulary skills (Wasik & Hindman, 2020). Children's use of taught vocabulary is essential for deep understanding of word meanings; therefore,

some approaches encourage tracking and celebrating when children use focal words (Zucker et al., 2019).

What Words Are Worth Teaching?

Although researchers have suggested different approaches to determining which words are worthy of the limited instructional time (Beck, McKeown, & Kucan, 2013; Biemiller, 2010), there is consensus that young children are able to learn sophisticated words that express a known concept with more precision or nuance.

Current recommendations for evidence-based practice (Foorman et al., 2016) include an explicit instructional focus on academic vocabulary that comprises two types of sophisticated vocabulary: (a) domain-general topics, most of which include concepts that are not present in the immediate context, such as emotions, cognition, judgments, causal explanations, or predictive inferences; and (b) domain-specific topics that are technical vocabulary specific to various disciplines such as science, engineering, history, or the arts. See Figure 2 with

Figure 2 Three Types of Words

Basic words

- Common words
- Typically learned independently through daily conversations or shared reading
- Examples: phone, book, mad

Domaingeneral sophisticated words

- Used in a variety of texts and learning domains
- More precise or complex form of a concept
- Important for comprehension of all text genres
- Examples: clever, complicated, frustrated

Domainspecific technical words

- Specific to a learning domain or subject area
- Important for comprehension of informational text genres
- Examples: photosynthesis, ukulele

Note. Focus direct instruction on sophisticated and technical words.

examples of these types of academic words and nonacademic, basic words.

Some experts (Beck et al., 2013) use synonymous terms like Tier 1 for basic words, Tier 2 for domain-general academic words, and Tier 3 for domain-specific words. Basic words do not need direct instruction in most cases. English learners may require direct teaching of some basic words, but they can also learn and use sophisticated words (see Manyak & Bauer, 2009).

When teaching academic vocabulary, consider referring to these as "amazing words" or "wondrous words." Early in the school year, introducing a term like this allows children to understand these are powerful words that warrant attention. Academic vocabulary is a key currency in school because it is required for success in classroom discourse and learning from texts in elementary school through college (Snow, 2010).

Importantly, vocabulary instruction should teach conceptually related words to expand semantic networks and to ensure that children learn conceptually linked categories of words (see Hadley, Dickinson, Hirsh-Pasek, & Golinkoff, 2019; Manyak & Latka, 2020). Curricula that are designed to systematically teach conceptual knowledge in science and social studies topics lend themselves to repeated exposure to related words (Gonzalez et al., 2010; Neuman & Kaefer, 2018). Importantly, these curricula encourage children to actively use newly learned words in conversation.

Word-Learning Strategies for Young Children

Asking questions such as "What is that for?" or "What does that mean?" are important tools young children use for cognitive development and word learning (Chouinard, Harris, & Maratsos, 2007). By preschool, children have sophisticated skills in actively processing new words and inferring their meaning. Young children test their hypotheses about word meanings using a process of elimination (Halberda, 2006), but the trial-and-error processing of guessing a word's meaning can lead to errors (Warmington, Hitch, & Gathercole, 2013). Asking adults what words mean can reduce errors in word leaning.

Young learners, ages 4 to 6 years, demonstrate increasing flexibility in learning new words and multiple meanings (Deák, 2000). Thus, a second word learning strategy is noticing words that have multiple meanings, such as an ocean wave and using your hand to wave goodbye. Noting words that have

multiple meanings facilitates flexible word learning strategies. Similarly, even preschool-age bilingual children can readily learn cognates, words that sound the same and have similar meanings across languages (e.g., Lindgren & Bohnacker, 2019).

Why Is Word Consciousness Beneficial for Young Learners?

Children (and adults) who are word conscious are interested in learning new words and motivated to use them correctly (Graves & Watts-Taffe, 2008). If direct instruction is the initial invitation to learn a new word, word consciousness supports are the next step to harnessing the power of words as children make them their own in conversations. Given that children need to learn thousands of words per year, getting children to love new words becomes critical. There is limited research on the effectiveness of promoting word consciousness. Yet it stands to reason that promoting word consciousness can support language and reading outcomes (Scott & Nagy, 2004).

Launching a playful word consciousness program during prekindergarten through grade 1 may support positive word learning dispositions that are sustained into later grades when children need to be motivated to look up unknown vocabulary they encounter in reading and use precise, academic words in their writing (Baumann, Ware, & Edwards, 2007). Combining word consciousness supports with direct vocabulary instruction is a promising practice for the following reasons:

- Word learning is incremental: Distributing practice hearing and using words over time will improve learning.
- Word knowledge is complex: Understanding a word receptively is an important step for young learners, but being able to eventually use a word in conversation requires multiple encounters with words in diverse contexts.
- Young learners are proud of using big words: An early mind-set that young children can use sophisticated words may produce positive beliefs that support later literacy.

Planning Direct Instruction of Academic Words

In this section, we elaborate on practical components for planning direct vocabulary instruction based on the research summarized earlier and our work with early childhood teachers (e.g., Zucker et al., 2019; Zucker, Solari, Landry, & Swank, 2013). All teacher names are pseudonyms.

Create a Vocabulary-Focused Shared Reading Routine

Vocabulary-focused shared book reading is a central component within most intentional vocabulary programs (see Wasik et al., 2016). Three or four times a week, plan to read aloud a book that contains academic vocabulary. Consider using the steps detailed in Table 1 to preview academic vocabulary before reading, elaborate on them during reading, and extend opportunities to use these words after reading.

Choose Words to Teach

As stated, academic words that warrant direct teaching include both domain-general sophisticated words and domain-specific technical words (see Figure 2). Our approaches follow other detailed resources on selecting words that warrant teaching (see Beck et al., 2013; Graves et al., 2014). We begin with sticky notes or spreadsheets to comprehensively list all potentially unknown words within a text or unit of study. This usually produces an extensive list of words to teach that we must narrow down.

Although educators may reasonably arrive at different final lists of words worth teaching, what is important is to use a systematic selection process in which you articulate why you selected words that are (a) essential for comprehension, (b) accessible for children's level, and (c) valuable for long-term reading and academic success. For example, Figure 3 shows the steps we used to select a set of four words to teach from a long list of potential words within a popular version of the classic folk tale The Three Little Pigs:

- 1. List all the words that are potentially unknown, important, or difficult.
- 2. Cross out words that are not essential for comprehension.
- 3. Cross out words that can be understood through context or illustrations.
- 4. Star the sophisticated (high-mileage) words.
- 5. Circle the final words you will teach.

We recommend teaching two to three words per reading. Ms. Hartmann selected four words to teach across two readings of The Three Little Pigs: afford, terrified, frustrated, and ruined. Ms. Rodriguez taught mostly English learners, though, so she selected different words that were essential to comprehension, such as straw and bricks, for her students.

Table 1
Book Reading Routines to Support Vocabulary Learning

Timing	Steps	
Before reading	 Preview two or three vocabulary words to listen for using picture cards: Have children say the word after you. Give a child-friendly definition. Describe the picture card and how it links to the word. Keep these picture cards displayed. Invite children to put their thumbs up when they hear a word read aloud. 	
During reading	 3. Read with expression, use gestures, and nonverbal cues to support word learning. Point illustrated basic words rather than directly teaching. 4. Pause at pages with focal vocabulary to elaborate on focal word meanings: Repeat the word's definition and link to its meaning in text. Ask a question about the word or act out the word with children. 	
After reading	 5. Encourage children to use these new "amazing words" by displaying picture cards at a vocabulary wall/chart and tracking when children say/hear these words. 6. Revisit these words in various extension activities so that children use the words: In small groups for children who need targeted language support As center extension activities, such as sorting example/nonexample picture cards Acting out some words playfully in review/transition activities 	

Figure 3
Example of Word Selection Process for The Three Little Pigs

Word selection steps	Possible vocabulary (order presented in text)	
1. List all possible words.	 straw bricks afford admire beverage tender pounced flimsy frightened terrified sturdy chimney frustrated boiling unfortunately ruined 	Straw* bricks* afford* admire* beverage funder pounded flimsy frightend* ferrified*
2. Remove words not essential for comprehension.	beveragetenderpouncedunfortunately	chimney frustvated *
3. Remove words that can be understood through context or illustrations.	flimsysturdychimneyboiling	un fortunately rained *
4. Mark all the academic words with a star or an asterisk.	Domain-general words: afford admire frightened terrified frustrated ruined Domain-specific words: straw bricks	
5. Finalize the two to six words that are best to teach in this text to my students.	affordterrifiedfrustratedruined	

Select Related Academic Word Sets

Core curricula vary in the extent to which they provide support for teaching taxonomies of semantically related words. Several effective approaches emphasize teaching-related academic words around social studies or science topics (plant

classification: fruits, vegetables; plant parts: stem, root, petal; e.g., Gonzalez et al., 2010; Hadley et al., 2019; Neuman & Kaefer, 2018). As you prepare for a new unit of study, critically analyze if you might add semantically related words to those in your core curriculum. Previously published articles

in this journal have shown how selecting sets of semantically related words is more efficient than teaching unrelated words (Baumann et al., 2007; Manyak & Latka, 2020).

Plan Child-Friendly Definitions in Advance

It is easier for children to understand definitions that are child friendly and do not use any additional sophisticated language, as often occurs in traditional dictionary definitions (Gardner, 2007). Yet child-friendly definitions always originate from dictionary definitions to ensure they are accurate and complete. Some experts recommend making word explanations sound conversational so they are easier to understand than the dense, concise manner of many textbooks (Beck et al., 2013; Snow, 2010). For example, a dictionary definition for the word terrified might be "extremely frightened", but a more child-friendly definition replaces the sophisticated word frightened with a simple word and uses a more conversational tone: "When you are terrified, you feel very scared."

Writing child-friendly definitions requires considerable practice and reflection to ensure you explain an academic word without using other sophisticated words. Consider using the child-friendly definition checklist in Figure 4 to critique and improve initial drafts of definitions. Joining professional learning communities or soliciting coaching focused on planning vocabulary instruction provides valuable contexts to reflect on the quality of vocabulary explanations (Gersten, Dimino, Jayanthi, Kim, & Santoro, 2010). See Table 2 in which

we captured examples of feedback that coaches have given teachers to refine academic word definitions. Also note in the right column of this table in which teachers support children in saying and using these defined words.

Create and Display Vocabulary Picture Cards

For young learners, picture cards provide an important visual aid to support new word learning. Picture cards can be used to preview focal academic vocabulary to listen for during read-alouds (e.g., August et al., 2018). This provides an opportunity for children to experience the word in a context beyond that presented in the text.

Selecting images that clearly illustrate the vocabulary word is a critical and often challenging step. An example of a picture card for teaching the word coincidence is shown in Figure 5. As shown, this image is accessible because it features young children and clearly illustrates similarities between the two girls. Yet without one or two sentences that describe the picture, the link to the academic word is not clear. Therefore, it is helpful to write a concise sentence that links the word and the picture, such as "It was a coincidence that these sisters put on the same shirt—they didn't plan it!"

In Figure 6, an obscure temporal concept is made visual for the word recently by explaining, "This girl has some milk left on her lips. She must have drank a cup of milk recently." When selecting images for picture vocabulary cards, search not only for the focal word but also search terms such

Figure 4
Child-Friendly Definition Checklist

Characteristic	Description	Score (0 = No, 1 = Yes)
Conversational	The definition is expressed as a complete thought and references the focal word in the first clause of the sentence.	□ No □ Yes
Simple	The definition avoids using other sophisticated words to describe the word's meaning.	□ No □ Yes
Accurate and complete	The definition is correct in all of its details and expresses the full meaning of the word.	□ No □ Yes

Table 2
Examples of Refining Initial Definitions of Academic Vocabulary and Promoting Children's Use

Vocabulary word	Original definition	Coach feedback	Area to improve	Suggested definition	Student's word use
frustrated	When you are frustrated, you feel angry, discouraged, or upset	The word discouraged is a sophisticated word. We can remove that and convey the same idea with a simple word such as upset. Also, a missing concept is that frustration occurs when one is not able to do something.	Simple wording; accuracy	When you feel frustrated, you feel upset because you can't do something.	Student: I'm mad. Teacher: Are you frustrated he does not want to play? Student: I'm frustrated cuz he won't play tag.
label	A label is a piece of paper or plastic that has information about the thing it is connected to.	This definition was a bit complicated and uses the word connected instead of a more simple term.	Simple wording	A <i>label</i> is when words are printed on something to tell what it is or who it belongs to.	Student: My water bottle has a label. Teacher: Yes! There's a label with your name.
manage	If you manage to do something, you do it even if it is hard.	The wording is nice and simple, but adding the concept of being able is important to make this definition complete.	Accuracy	If you manage to do something, you are able to do it even if it is hard.	Teacher: Can you manage holding that door and your bag? Student: Yes, I can manage it.

as child so that the image is more likely to illustrate a context that children can relate to. An example of a relatable image for the word frustrated is a girl upset while tying her shoe, unlike an image of a frustrated businessman, which is not accessible to children.

Encourage Children to Ask About Words

A simple, age-appropriate word learning strategy to teach young children is that they should ask adults what words mean when they encounter a new word (Chouinard et al., 2007). Encourage this during activities such as shared reading by reminding children to show a hand signal like thumbs-sideway if they want to slow down and talk about a word.

For example, before showing a science video about phases of the moon to her prekindergartners, Ms. Williams said, "You will hear some big words in this video. Listen for new words so we can talk about what they mean." Nudging children to notice and ask about new words not only is a mechanism

for children to solicit direct explanations but also promotes word consciousness.

Go Nuts for Words: Word Consciousness Strategies

In this section, we consider ways to promote broader word consciousness with examples from classrooms in our past research (e.g., Zucker et al., 2019).

Use a Mascot

For younger children, including a mascot can add an element of playfulness and whimsy to word learning. This mascot can be tied to a theme the children can relate to, such as a squirrel that collects "word acorns" or a dog that collects bones. For example, Ms. Asher used an adorable squirrel stuffed animal named Scout who was "nuts for words." Scout collected word nuts (i.e., acorns) to fill his jar each time he heard children use a wondrous word recently taught.

Figure 5
Sample Picture Cards With Child-Friendly Definitions



Likewise, another prekindergarten teacher, Mr. Tompkin, used a superhero-themed stick puppet named PJ Pig who wanted to fill his "word bank" because his "word power" was his superpower. Children put a penny in a piggy bank each time

they used an amazing word (Zucker et al., 2020). An advanced tracking system Ms. Asher used when studying baby animals (e.g., mice and rabbits) not only included stickers to collect word nuts for Scout the squirrel but also served as a visual word web.

Figure 6
Sample Picture Card in Which an Implicit, Temporal Concept Is Made Explicit

recently

recently

If you have done something recently, you did it a short time ago.

Whole Group (Tier 1) - Before Reading

- Children say word: Say this word after me: "Recently."
- · Define: If you have done something recently, you did it a short time ago.
- Describe picture: This girl has some milk left on her lips. She must have drank a cup of milk recently.
- Act it out: Have you had milk to drink recently? If you have, show me a thumbs up and say, "I drank milk recently."

Challenge children to use the word at any time.

literacyworldwide.org

Small Group (Tier 2) - Review & Discuss

- Children say word: Say this word after me: "Recently."
- Define: If you have done something recently, you did it a short time ago.
- Cloze prompt: This girl drank a cup of milk r___ (recently).
- Discuss: Have you had milk to drink recently? What else have you done recently, or a short time ago?

Support child in giving you a complete sentence response. Have a back-and-forth conversation.

teaching together The Pigeon Needs a Bath! by Mo Willems image Credit 45459598, koreinoppe, Block, Getty Images © 2014-2017 The University of Texas Health Science Center of Houston, All rights reserved.

Note. The color figure can be viewed in the online version of this article at http://ila.onlinelibrary.wiley.com.

This display included a web of words showing animal behaviors (e.g., groom, protect, nibble, jump) and physical traits (e.g., sleek, slick, tiny).

Track and Celebrate Sophisticated Word Use

Children can be motivated by keeping track of the sophisticated words they use and celebrating when they reach goals (Beck et al., 2013). For example, in Mr. Tompkin's prekindergarten class, children counted the words in the piggy bank every week and celebrated every new 20 words they learned. In a first-grade classroom, a teacher recorded the words children learned and used in a spoken or written sentence on a 100s chart.

As children reach important word-learning milestones, celebrate their accomplishments in diverse ways. Some teachers used classroom dance parties or extra center time as an easy, cost-efficient way. Other teachers used word consciousness games such as bingo parties using amazing words or sent families videos of children young "getting caught" using powerful words.

Explain Multiple-Meaning Words

Discovering that words can have multiple meanings can increase children's interest in word learning. Noting multiple meaning words also reduces potential confusion and increases flexible thinking. When teaching words with multiple meanings during a read-aloud, it is important to first explain the meaning relevant to understanding the book. After reading, review the focal word's primary meaning before explaining the word's other meaning(s).

For example, when Ms. Asher read an informational book about rabbits to her kindergartners, she directly taught the word groom in the context of the rabbits grooming themselves. After reading, she reviewed this primary meaning with a picture card before explaining this is a multiple meaning word. She showed a second picture card and explained that a groom is also a man getting married. She asked the children if they thought a groom would groom himself before going to the wedding. They laughed as they discussed that the human groom would not groom himself quite like the rabbit, but would do other things to look good on his wedding day.

The flexibility that certain words offer allows children to engage in wordplay with puns (Graves

& Watts-Taffe, 2008). Fun jokes like "Why are teddy bears never hungry? Because they are always stuffed!" delight children and shows the power of multiple meaning words.

Model Sophisticated Vocabulary Use

When teachers use sophisticated vocabulary, this also encourages word consciousness. Rather than dumbing down what we say to young children, teachers can model using academic vocabulary (Lane & Allen, 2010). For example, rather than asking children to "put away" their markers and crayons, Ms. Williams asked her preschoolers to "gather and categorize" these writing tools. Transition times can be used to review focal academic vocabulary; embed vocabulary into playful approaches to lining up. For example, Ms. Rodriguez asked her first graders to consider taught words (e.g., famous, admire) with playful instructions such as "As we walk to our meeting area, let's think about one of our amazing words, famous. Imagine you are a famous actor who is waving to crowds of admirers."

Putting It Together: Improving the Quantity and Quality of Vocabulary Instruction

Intentional planning for robust vocabulary instruction is important for children's learning and can be guided by high-quality curricula and professional development. For example, we originally developed English and Spanish versions of a vocabulary curriculum called Developing Talkers and Hablemos Juntos, respectively, to be used in a statewide preschool professional development program in Texas (Zucker et al., 2019; Zucker, Solari, Landry, White, et al., 2013). We have further studied this curriculum in other contexts (e.g., Zucker, Carlo, Montroy, & Landry, 2018; Zucker et al., 2020). This curriculum provides both professional development and supplemental lessons to support teachers in more effective vocabulary instruction. Teachers receive training and coaching on how to assess children's vocabulary knowledge so they can provide universal, Tier 1 instruction to all children as well as targeted, Tier 2 small-group instruction to children demonstrating weak vocabulary knowledge.

After using provided lessons that feature direct instruction of two or three vocabulary words across 24 books, teachers in bilingual classrooms showed

significant growth (greater than chance) in the quantity of their vocabulary instruction during readalouds (Zucker, Solari, Landry, et al., 2013). That is, 49 prekindergarten teachers doubled the number of times they defined vocabulary words after the program, moving from four- to eight-word elaborations.

As part of the program, teachers were coached in creating their own shared reading lesson plans featuring direct vocabulary instruction before and during reading of narrative and informational texts. We reviewed up to eight lesson plans per teacher (143 total) and examined whether teachers improved their skill in selecting important words and developing quality definitions. After receiving coaching, teachers selected 98% academic, rather than basic, vocabulary words. These academic words were almost evenly distributed between domain-general words (n = 190) and domain-specific (n = 226).

Most of teachers' definitions (82%) were accurate representations of the word's meaning. There was one area of the child-friendly definition checklist where some teachers needed improvement. That is, 31% of definitions included a sophisticated word to explain the focal academic vocabulary. Overall, teachers reported planning and reflecting on vocabulary definitions benefited their instructional quality and student learning.

Conclusion

Broad academic vocabulary knowledge is essential for school success. Early childhood grades are the

TAKE ACTION!

- 1. Select picture books with academic vocabulary that you will use for vocabulary instruction.
- 2. Identify three to six important, academic words to teach from each book.
- **3.** Plan the order in which you will teach words across repeated readings.
- Use a learner's dictionary to look up each word's meaning. Adapt these definitions to be more child friendly.
- **5.** Teach vocabulary using picture cards, questions that elicit the word, act-it-outs, and other strategies to give children multiple exposures to the word.
- **6.** Plan ways to increase children's consciousness of these and other academic vocabulary.

perfect time to spark children's excitement for word learning. We suggest strategies to directly teach individual words and to promote children's word consciousness. Challenge yourself to use multiple suggested strategies to improve the quantity and quality of academic vocabulary instruction in prekindergarten through grade 1.

As you take action, consider how schoolwide models could be even more effective (Ebbers & Denton, 2008). There are resources for vertical planning of what words to teach across early grades versus later grades (e.g., Biemiller, 2010) to ensure that children build increasingly robust academic vocabularies.

NOTES

Research reported in this publication was supported by grants (R305A190065 and R305A150319) from the Institute of Education Sciences, U.S. Department of Education, and by the Dan L. Duncan Family Foundation.

REFERENCES

- Anderson, R.C., & Nagy, W.E. (1993). The vocabulary conundrum (Tech. Rep. No. 570). Champaign: Center for the Study of Reading, University of Illinois at Urbana-Champaign.
- August, D., Artzi, L., Barr, C., & Francis, D. (2018). The moderating influence of instructional intensity and word type on the acquisition of academic vocabulary in young English language learners. *Reading and Writing*, 31(4), 965–989. https://doi.org/10.1007/s11145-018-9821-1
- Baumann, J.F., Ware, D., & Edwards, E.C. (2007). "Bumping into spicy, tasty words that catch your tongue": A formative experiment on vocabulary instruction. *The Reading Teacher*, 61(2), 108–122. https://doi.org/10.1598/RT.61.2.1
- Beck, I.L., McKeown, M.G., & Kucan, L. (2013). Bringing words to life: Robust vocabulary instruction. New York, NY: Guilford. Biemiller, A. (2010). Words worth teaching: Closing the vocabulary
- gap. Columbus, OH: McGraw-Hill SRA.
 Blachowicz, C.L.Z., Baumann, J.F., Manyak, P.C., & Graves, M.F.
 (2013). "Flood, fast, focus": Integrating vocabulary in the classroom. What's New in Literacy Teaching? [IRA E-ssentials series]. Newark, DE: International Reading Association.
- Cabell, S.Q., Justice, L.M., McGinty, A.S., DeCoster, J., & Forston, L.D. (2015). Teacher-child conversations in preschool classrooms: Contributions to children's vocabulary development. Early Childhood Research Quarterly, 30(1, Pt. A), 80–92. https://doi.org/10.1016/j.ecresq.2014.09.004
- Chouinard, M.M., Harris, P.L., & Maratsos, M.P. (2007). Children's questions: A mechanism for cognitive development. Monographs of the Society for Research in Child Development, 77(1) i=129
- Coyne, M.D., McCoach, D.B., Loftus, S., Zipoli, R. Jr, & Kapp, S. (2009). Direct vocabulary instruction in kindergarten: Teaching for breadth versus depth. The Elementary School Journal, 110(1), 1–18. https://doi.org/10.1086/598840
- Deák, G.O. (2000). The growth of flexible problem solving: Preschool children use changing verbal cues to infer multiple word meanings. *Journal of Cognition and Development*, 1(2), 157–191. https://doi.org/10.1207/S15327647JCD010202
- Ebbers, S.M., & Denton, C.A. (2008). A root awakening: Vocabulary instruction for older students with reading difficulties. Learning Disabilities Research & Practice, 23(2), 90–102. https://doi.org/10.1111/j.1540-5826.2008.00267.x

- Elley, W.B. (1989). Vocabulary acquisition from listening to stories. Reading Research Quarterly, 24(2), 174–187. https:// doi.org/10.2307/747863
- Foorman, B., Beyler, N., Borradaile, K., Coyne, M., Denton, C.A., Dimino, J., & Wissel, S. (2016). Foundational skills to support reading for understanding in kindergarten through 3rd grade (NCEE 2016-4008). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.
- Gardner, D. (2007). Children's immediate understanding of vocabulary: Contexts and dictionary definitions. Reading Psychology, 28(4), 331–373. https://doi.org/10.1080/02702 710701260508
- Gersten, R., Dimino, J., Jayanthi, M., Kim, J.S., & Santoro, L.E. (2010). Teacher study group: Impact of the professional development model on reading instruction and student outcomes in first grade classrooms. American Educational Research Journal, 47(3), 694–739. https://doi.org/10.3102/00028 31209361208
- Gonzalez, J.E., Pollard-Durodola, S., Simmons, D.C., Taylor, A.B., Davis, M.J., Kim, M., & Simmons, L. (2010). Developing low-income preschoolers' social studies and science vocabulary knowledge through content-focused shared book reading. *Journal of Research on Educational Effectiveness*, 4(1), 25–52. https://doi.org/10.1080/19345747.2010.487927
- Graves, M.F., Baumann, J.F., Blachowicz, C.L., Manyak, P., Bates, A., Cieply, C., ... Von Gunten, H. (2014). Words, words everywhere, but which ones do we teach? The Reading Teacher, 67(5), 333–346. https://doi.org/10.1002/trtr.1228
- Graves, M.F., Schneider, S., & Ringstaff, C. (2018). Empowering students with word-learning strategies: Teach a child to fish. The Reading Teacher, 71(5), 533–543. https://doi.org/10.1002/trtr.1644
- Graves, M.F., & Watts-Taffe, S. (2008). For the love of words: Fostering word consciousness in young readers. The Reading Teacher, 62(3), 185–193. https://doi.org/10.1598/RT.62.3.1
- Hadley, E.B., Dickinson, D.K., Hirsh-Pasek, K., & Golinkoff, R.M. (2019). Building semantic networks: The impact of a vocabulary intervention on preschoolers' depth of word knowledge. Reading Research Quarterly, 54(1), 41–61. https:// doi.org/10.1002/rrq.225
- Halberda, J. (2006). Is this a dax which I see before me? Use of the logical argument disjunctive syllogism supports word-learning in children and adults. Cognitive Psychology, 53(4), 310–344. https://doi.org/10.1016/j.cogps
- Lane, H.B., & Allen, S.A. (2010). The vocabulary-rich classroom: Modeling sophisticated word use to promote word consciousness and vocabulary growth. The Reading Teacher, 63(5), 362–370. https://doi.org/10.1598/RT.63.5.2
- Lindgren, J., & Bohnacker, U. (2019). Vocabulary development in closely-related languages: Age, word type and cognate facilitation effects in bilingual Swedish-German preschool children. Linguistic Approaches to Bilingualism, 10(3), 1–36. https://doi.org/10.1075/lab.18041.lin
- Manyak, P.C., & Bauer, E.B. (2009). English vocabulary instruction for English learners. The Reading Teacher, 63(2), 174–176. https://doi.org/10.1598/RT.63.2.11
- Manyak, P.C., & Latka, M. (2020). Engaging vocabulary units: A flexible instructional model. The Reading Teacher, 73(4), 501–512. https://doi.org/10.1002/trtr.1852
- Marulis, L.M., & Neuman, S.B. (2010). The effects of vocabulary intervention on young children's word learning: A meta-analysis. Review of Educational Research, 80(3), 300–335. https://doi.org/10.3102/0034654310377087
- Neuman, S.B., & Kaefer, T. (2018). Developing low-income children's vocabulary and content knowledge through a shared book reading program. Contemporary Educational Psychology, 52, 15–24. https://doi.org/10.1016/j.cedpsych.2017.12.001

- Penno, J.F., Wilkinson, I.A.G., & Moore, D.W. (2002). Vocabulary acquisition from teacher explanation and repeated listening to stories: Do they overcome the Matthew effect? *Journal of Educational Psychology*, 94(1), 23–33. https://doi.org/10.1037/0022-0663.94.1.23
- Ricketts, J., Nation, K., & Bishop, D.V.M. (2007). Vocabulary is important for some, but not all reading skills. Scientific Studies of Reading, 11(3), 235–257. https://doi.org/10.1080/10888 430701344306
- Scott, J.A., & Nagy, W.E. (2004). Developing word consciousness. In J.F. Baumann & E.J. Kame'enui (Eds.), Vocabulary instruction: Research to practice (pp. 201–217). New York, NY: Guilford.
- Snow, C.E. (2010). Academic language and the challenge of reading for learning about science. Science, 328(5977), 450–452. https://doi.org/10.1126/science.1182597
- Snow, C.E., & Kim, Y.-S. (2007). Large problem spaces: The challenge of vocabulary for English language learners. In R.K. Wagner, A.E. Muse, & K.R. Tasnnenbaum (Eds.), Vocabulary acquisition: Implications for reading comprehension (pp. 123–139). New York, NY: Guilford.
- Sonbul, S., & Schmitt, N. (2010). Direct teaching of vocabulary after reading: Is it worth the effort? ELT Journal, 64(3), 253–260. https://doi.org/10.1093/elt/ccp059
- Stanovich, K.E., & Cunningham, A.E. (1993). Where does knowledge come from? Specific associations between print exposure and information acquisition. *Journal of Educational Psychology*, 85(2), 211–229. https://doi.org/10.1037/0022-0663.85.2.211
- Warmington, M., Hitch, G.J., & Gathercole, S.E. (2013). Improving word learning in children using an errorless technique. Journal of Experimental Child Psychology, 114(3), 456–465. https://doi.org/10.1016/j.jecp.2012.10.007
- Wasik, B.A., & Hindman, A.H. (2020). Increasing preschoolers' vocabulary development through a streamlined teacher professional development intervention. Early Childhood Research Quarterly, 50(1), 101–113. https://doi.org/10.1016/j.ecresq.2018.11.001
- Wasik, B.A., Hindman, A.H., & Snell, E.K. (2016). Book reading and vocabulary development: A systematic review. Early Childhood Research Quarterly, 37(4), 39–57. https://doi.org/10.1016/j.ecresq.2016.04.003
- Wright, T.S., & Cervetti, G.N. (2017). A systematic review of the research on vocabulary instruction that impacts text comprehension. Reading Research Quarterly, 52(3), 203–226. https://doi.org/10.1002/rrq.163
- Zucker, T.A., Cabell, S.Q., Petscher, Y., Mui, H., Landry, S.H., & Tock, J. (2020). Teaching together: Effects of a tiered language & literacy intervention with head start teachers and diverse families. Early Childhood Research Quarterly, in press.
- Zucker, T.A., Carlo, M.C., Montroy, J., & Landry, S.H. (2018).

 Randomized control trial of the Hablemos Juntos academic language curriculum for Spanish-speaking preschoolers receiving Tier 2 instruction. Paper presented at the Children's Learning Institute Bilingual Research Conference, Houston, TX.
- Zucker, T.A., Carlo, M.S., Landry, S.H., Masood-Saleem, S.S., Williams, J.M., & Bhavsar, V. (2019). Iterative design and pilot testing of the Developing Talkers tiered academic language curriculum for pre-kindergarten and kindergarten. Journal of Research on Educational Effectiveness, 12(2), 274–306. https://doi.org/10.1080/19345747.2018.1519623
- Zucker, T.A., Solari, E.J., Landry, S.H., & Swank, P.R. (2013). Effects of a brief, tiered language intervention for prekindergarteners at risk. Early Education and Development, 24(3), 366–392. https://doi.org/10.1080/10409289.2012.664763
- Zucker, T.A., Solari, E.J., Landry, S.H., White, M.E., Correa, E., & DeMello, A. (2013). Teacher's Spanish book reading practices and dual language learners' oral language skills before and after multi-tiered instructional supports. Poster presented at the Children's Learning Institute Bilingual Research Conference, Houston, TX.

MORE TO EXPLORE

Readers interested in supplemental information on this topic may find these resources useful:

- Check out this song from a program called Teaching Together that explains "Word Power" and encourages children to use amazing words: https://cdn.jwplayer.com/previews/sgUty9W6-OZwX2Uq2.
- The CIRCLE Activity Collection includes hundreds of lesson plans for prekindergarten and kindergarten levels that include direct vocabulary and model videos: https://cliengage.org/public/tools/materials/cac-prek/.
- Consider reading aloud the book *Big Words for Little People* by Jamie Lee Curtis. It is a humorous book designed to help young children communicate with sophisticated words.
- As you write child-friendly definitions, we recommend using learner dictionaries such as this one from Merriam Webster: https://learnersdictionary.com/. If you're teaching semantically related words, consider word association dictionaries such as https://wordassociations.net/en/.

